INTERNATIONAL SEARCH REPORT

PCT/JP 03/11799

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 B01J19/32 F28F F28F25/08 F28F25/02 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) IPC 7 B01J F28F B01D Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal C. DOCUMENTS CONSIDERED TO BE RELEVANT Category 9 Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. US 5 224 351 A (JEANNOT PIERRE ET AL) 1 - 13X 6 July 1993 (1993-07-06) abstract column 7, line 45 - line 61; figure 10 column 6, line 23 - line 64; figures 5,7 EP 0 997 189 A (AIR PROD & CHEM) X 1,13 3 May 2000 (2000-05-03) abstract column 7, paragraph 41 - paragraph 42; 2-12 figures 4,5 EP 0 916 400 A (PRAXAIR TECHNOLOGY INC) 1,13 X 19 May 1999 (1999-05-19) abstract 2 - 12Α page 2, paragraph 4; figure 2 Further documents are listed in the continuation of box C. Patent family members are listed in annex. X Special categories of cited documents: "T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance invention "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-"O" document referring to an oral disclosure, use, exhibition or other means ments, such combination being obvious to a person skilled in the art. "P" document published prior to the international filing date but later than the priority date claimed *&* document member of the same patent family Date of the actual completion of the international search Date of mailing of the International search report 19 January 2004 26/01/2004 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016 Thomasson, P

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Inte nal Application No
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